DEP/INLAND WATER RESOURCES DIVISION
DAM INSPECTION CHECKLIST

DAM NAME & # : Birch Mill Pond #5004

INSPECTION DATE: 11/27/07 and 4/29/08

IMPOUNDMENT AREA: 11.1 acres

POOL LEVEL: 3" below spillway

WEATHER: 50° F and cloudy

INSPECTORS: JFS

ACTION TAKEN: Engineering Request

DAM/EMBANKMENTS

GENERAL CONDITION: The dam is 214± feet long and 9± feet in height. The right and left embankments are earthen, each approximately 100 feet long. There is a centrally located concrete spillway which is 14± feet long with a 42 inch spillway notch located in the center. A house is built into the dam on the left crest downstream side.

VEGETATIVE COVER: The embankments are in fair condition. There is some grass cover on the left embankment and some exposed soil. Vegetative grass cover is sparse in areas on the right embankment. There are trees and woody vegetation on the right embankment and within 25 feet of the downstream toe. There are two large trees on the left embankment, one of which broke off over the winter.

EROSION / BURROWS: There is some surface erosion on the crest and the downstream slope of the right embankment. There is some minor scouring on the right upstream slope.

SETTLEMENT / ALIGNMENT / MOVEMENT: The right side crest is irregular in profile. The right embankment is approximately 1 foot higher than the left embankment. There is 1 foot of freeboard on the left embankment. The right downstream slope grade is not uniform. The right upstream slope is steep.

SEEPAGE / FOUNDATION DRAINAGE: No significant seepage or foundation drainage was observed.

RIPRAP: The upstream concrete wing walls extend approximately 10 feet from both sides of the spillway training walls. There is riprap along the upstream left side embankment.

CONCRETE CONDITION: The upstream left and right concrete wing walls have hairline cracks.

OTHER: There is a small dock on the right upstream embankment located towards the right dan abutment.

SPILLWAY, TRAINING WALLS, APRON

GENERAL CONDITION: Spillway adequacy is questionable due to the fact that the left side embankment has overtopped in the past. There is a wooden walk bridge located over the spillway section. The spillway, training walls and apron appear to be in good condition and appear to have been repaired in the past. The downstream spillway face is stone masonry.

SETTLEMENT/ALIGNMENT/MOVEMENTS: No significant settlement or movement was observed. Alignment appears to be good.

STONE MASONRY: A few voids were observed on the downstream vertical masonry endwall.

CONCRETE CONDITION: The concrete spillway and training walls appear to be in good condition.

CRACKS: No significant cracks were observed.

SCOURING / UNDERMINING: No significant scouring was observed in the spillway section.

DOWNSTREAM CHANNEL

SCOURING: No significant scouring in the downstream channel was observed.

DEBRIS: Some of the left downstream channel wall has collapsed.

RIPRAP: Stones have been placed randomly in the downstream channel to provide protection.

EMERGENCY SPILLWAY

N/A

INTAKE STRUCTURE(S)

GENERAL CONDITION: The condition of the intake structure is unknown. It is located on the upstream side of the spillway section.

CONCRETE CONDITION: N/A

SETTLEMENT / ALIGNMENT / MOVEMENT: Settlement and movement of the intake structure appeared to be minimal. Alignment appeared to be good.

OUTLET STRUCTURE(S)

GENERAL CONDITIONS: The outlet structure appears to be inoperative. A thorough view was obstructed by debris.

CONCRETE CONDITION: N/A

SETTLEMENT / ALIGNMENT / MOVEMENT: Settlement and movement appeared to be minimal.

STONE MASONRY: There are some voids in the downstream masonry wall.

MISCELLANEOUS FEATURES

N/A

DOWNSTREAM HAZARD REASSESSMENT

DOWNSTREAM HAZARD: Hazard Class BB: Moderate Hazard. South Winds Drive is located downstream.

RECOMMENDATIONS

1) Perform a hydraulic and hydrologic investigation of the dam's spillway to determine if the spillway can safely pass the 100 year storm event. Undertake the embankment improvements necessary in conjunction with any recommended spillway improvements, namely: provide a uniform dam crest elevation; restore eroded portions of the dam embankment; and provide upstream embankment erosion protection.

2) Investigate the location of the pedestrian bridge over the spillway section, to determine if it impacts on the spillway's ability to safely pass flow.

3) Repair the masonry wall on the downstream spillway face and on the left downstream channel training wall.

4) Remove all tree and brush from the left and right embankments and within 25 feet of the downstream toe of the dam.

5) Investigate the operability of the low level outlet structure and repair as necessary.

6) Repair any cracks in the upstream concrete wall and spillway section.

7) Keep the spillway and downstream channel areas free of debris on a routine basis.

Birch Mill Pond Dam
Essex
#5004
11/27/07

Photo #1: Overall view of the dam from the left dam abutment.

Photo #2: View of the upstream embankment and crest from the left dam abutment.

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Photo #3: View of the dam crest from the left dam abutment.

Photo #4: View of the upstream embankment and dam crest from the right dam abutment.

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Photo #5: View of the dam crest from the right dam abutment.

Photo #6: View of the right downstream embankment from the right dam abutment.

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Photo #7: View of the left side dam embankment from the spillway section.

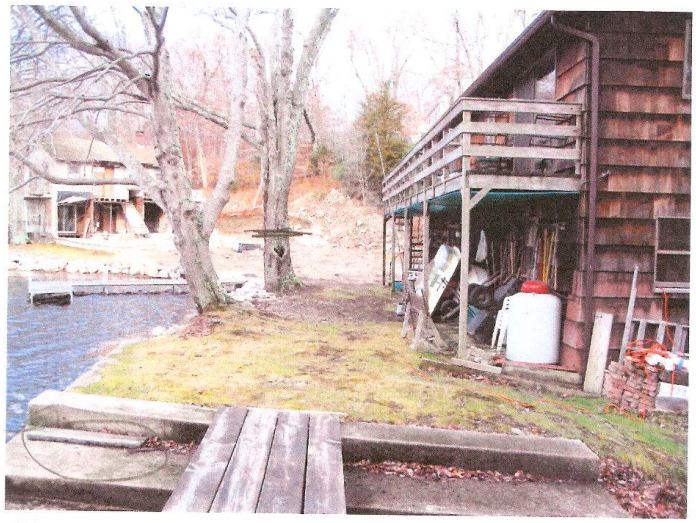

Photo #8: View of the left side of the spillway section and the left side dam embankment from the right spillway training wall.

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Photo #9: View of the right upstream embankment and dam crest from the spillway section.

Photo #10: View of the spillway section and right side dam embankment from the left side of the dam.

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Photo #11: View of the upstream side of the spillway section.

Photo #12: View of the spillway section from the right side dam embankment crest.

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Photo #13: View of the downstream side of the spillway section taken from the downstream channel.

Photo #14: View of the downstream channel area taken from the spillway section.

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Photo #15: View of the downstream channel area immediately below the spillway section.

Photo #16: View of the left side of the downstream channel directly below the spillway section.

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Photo #17: View of the upstream chamber for the intake structure located in the center of the upstream portion of the spillway section.